

REMARKS

Claims 1-4, and 6-20 remain in the application.

Claims 1 and 7 have been amended.

Claim 5 has been cancelled.

New Claims 9-20 have been added.

Support for the amended and new claims is found in the application as originally filed.

No new matter has been added.

Reconsideration of the application in light of the amended and new claims is respectfully requested.

The Examiner has rejected Claims 1-4, 6, and 8 under 35 U.S.C. § 103(a) as being unpatentable over Decarolis et al (U.S. Pat. No. 5,820,057) in view of Caldwell (U.S. Pat. No. 4,551,847) or Quenot et al. (U.S. Pat. No. 4,189,107). The Examiner has rejected Claim 7 under 35 U.S.C. 103(a) as being unpatentable over Decarolis et al. and Caldwell and in further view of Lin (U.S. Pat. No. 6,182,916).

Claim 1 recites the invention as follows:

1. A measuring tape comprising:
 - a first shaft;
 - a spool and a first sheave turnable together about said first shaft;
 - an elongate flexible blade having a free end and a terminal end, the free end adapted to extend out of a housing, said blade wound upon said spool when in a fully retracted position on said spool;
 - a second shaft;
 - a spiral spring assembly and a second sheave turnable together about said second shaft, said spiral spring assembly including a spring housing and a spirally wound spring, the spirally wound spring wound around the second shaft and contained within the spring housing so as to wind and unwind about said second shaft as said spring housing and second sheave turns;** and
 - a belt connecting said first sheave and said second sheave, whereby extension of said blade from its retracted position causes turning of said spool which in turn causes turning of said spring assembly to place the spring of said spring assembly in a spring-wound condition which spring will cause retraction of said blade upon release of said blade from an extended position.

(Emphasis added).

Applicant's invention relates to a measuring tape that includes a spool having a blade wound thereupon when in a retracted position. The measuring tape further includes a spiral spring assembly. The spiral spring assembly is coupled to the spool with a belt and a pair sheaves, one sheave attached to each of the spring assembly and the spool. The spring assembly includes a spring housing and a spring. The spring is wound around a second shaft and disposed within the spring housing. One end of the spring is secured to the spring housing and the other

end is attached to the second shaft. The spiral spring assembly, including the spring housing, and the sheave attached thereto are turnable together about the second shaft. When the free end of the blade is pulled, the spiral spring inside the spiral spring assembly is placed under tension caused by a rotational movement of the spiral spring housing. When the free end of the blade is released, a reverse rotational movement of the spring housing retracts the blade causing the blade to wrap around the spool.

The Examiner has stated that “Decarolis ‘057 discloses . . . a spiral spring assembly 80 and a second sheave 86 turnable together about said second axis, said spiral spring assembly (e.g. spring) including a spirally wound spring wound [there around] and contained there within so as to wind and unwind about said second axis as said second sheave turns . . .”. (Final Rejection at page 3). The Examiner has also stated that “reference number ‘80’ [of Decarolis et al. is] used to identify a spring assembly . . . which turns together with a second sheave 86 about an axis”, and that the references of Caldwell and Quenot are “related to the concept of using a flexible belt . . .”. (Advisory Action at page 2). It is respectfully submitted that the combination of Decarolis et al. and either Caldwell or Quenot does not teach or suggest a spiral spring assembly with a spring housing and a spirally wound spring turnable about a shaft.

Applicant respectfully points out that reference numeral 80 cited by the Examiner as a teaching of the claimed spiral spring assembly is merely a coiled spring. (Final Rejection at page 3). “A circulate plate or washer 78 seats in the open end of the cup over the coiled spring 80” (See Decarolis et al. at col. 3, lines 25-26; and FIG. 2). The Decarolis et al. coiled spring 80 is not the same as the spiral spring assembly of the presently amended claims. The spiral spring assembly, as defined in the claim, includes a spring housing and a spirally wound spring contained there within. The spring housing turns about the second shaft with rotation of the second sheave.

Decarolis et al. does disclose a spring motor 70 that includes a cup-shaped casing 72 within which spring 80 is disposed. However, the casing 72 has several bosses 74 spaced about the housing’s circumference. “The bosses 74 function as stops to prevent the casing 72 from rotating in the housing 10.” (Decarolis et al. at col. 3, lines 20-40, emphasis added). Therefore, Decarolis et al. clearly does not teach or suggest a spring housing that is turnable about a shaft. Caldwell, cited as a teaching of a flexible belt drive, also does not teach or suggest the claimed spiral spring assembly turnable about an axis.

The structure of Decarolis necessitates a different operation from that resulting from Applicant's claimed structure. Simply stated, the spring 80 of Decarolis et al. causes a rotation of the gear 86 but does not cause a rotation of casing 72. By merely replacing the transfer gear of Decarolis et al. with the flexible belt drive of Caldwell or Quenot, the resulting tape measure would operate in a completely different manner from the claimed structure, i.e. by rotating the gear instead of the spring housing. It is noted that the gear 86 of Decarolis et al. is turnable with the hub 84 but not turnable together with the casing 72. Thus, the flexible belt drive would not be driven by the spiral spring assembly in the combination suggested, but rather by the gear 86.

Substantial modifications to the combined tape measure of Decarolis et al. and Caldwell or Quenot would be required to arrive at the claimed structure. There is also no teaching or suggestion in Decarolis et al., Caldwell, and Quenot to further modify the combined structure to make a spiral spring assembly (including a spring housing) and sheave turnable together about a shaft. Since the combination of Decarolis et al. and Caldwell or Quenot does not teach or suggest a tape measure having a spiral spring assembly with a spring housing and a spirally wound spring turnable about a shaft, Claim 1 and claims depending directly or indirectly therefrom, are non-obvious and are directed to patentable subject matter.

Claim 7, rejected over Decarolis et al. and Caldwell and in further view of Lin, depends from independent Claim 1. Lin, cited as a teaching of an elastic protective layer, also does not teach or suggest the claimed turnable spiral spring assembly. Accordingly, dependent Claim 7 is deemed patentable for the same reasons as for independent Claim 1 described hereinabove.

New independent Claim 9 recites:

9. A measuring tape comprising:

a first shaft;

a spool and a first sheave turnable together about said first shaft;

an elongate flexible blade having a free end and a terminal end, the free end adapted to extend out of a measuring tape housing, said blade wound upon said spool when in a fully retracted position on said spool;

a second shaft;

a spiral spring assembly including a spring housing, a bearing assembly, and a spirally wound spring, the spring housing coupled to a second sheave and turnable together about said second shaft on said bearing assembly, the spirally wound spring having a first end and a second end, the first end secured to the second shaft and the second end secured to the spring housing, the spirally wound spring wound around the second shaft and contained within the spring housing so as to wind and unwind about said second shaft as said spring housing and second sheave turns; and

a belt connecting said first sheave and said second sheave, whereby extension of said blade from its retracted position causes turning of said spool which in turn causes turning of said spring assembly to place the spring of said spring assembly in a spring-wound condition which spring will cause retraction of said blade upon release of said blade from an extended position.

(Emphasis added).

The invention recited in Claim 9 includes a spiral spring assembly having a spring housing, a bearing assembly, and a spirally wound spring. The spring housing is turnable about the second shaft on the bearing assembly. It is respectfully submitted that Decarolis et al., Caldwell, and Quenot et al. do not teach or suggest a spring housing turnable about a shaft on a bearing assembly. For this reason, and the reasons provided hereinabove with respect to Claim 1, Claim 9 is patentable. Since Claim 9 is deemed patentable, Claims 10-19 that depend either directly or indirectly therefrom, are likewise patentable.

Applicant also has added new Claim 20 in an attempt to provoke an interference between the instant application and Qilian (U.S. Pat. No. 7,024,790). Qilian was granted over the Decarolis et al., Caldwell, and Lin references cited against the instant application. An interference proceeding is hereby suggested under 37 CFR 41.202.

Claim 20 is an exact copy of Claim 1 recited in Qilian. Claim 1 of Qilian is believed to interfere with Claims 1 and 20 of Applicant's present application, the subject matter of which forms the proposed count of the suggested interference. A claim chart comparing the claims corresponding to the count is provided below, for purpose of showing why the claims interfere within the meaning of § 41.203(a). Reference numerals have been inserted in red for Qilian and in blue for the present application to facilitate the comparison.

U.S. Pat. No. 7,024,790 (Claim 1); Serial No. 10/529,069 (New Claim 20)	Serial No. 10/529,069 (Currently Amended Claim 1)
A tape measure having a double-axis reel assembly comprising:	A measuring tape comprising:
a primary axis (11) (16);	a first shaft (16);
a primary spool (12) (18) and a first gear (16) (28) turnable together about the primary axis (11) (16);	a spool (18) and a first sheave (28) turnable together about said first shaft (16);
a flexible measuring tape blade (20) (20) wound upon the primary spool (12) (18) and normally in a fully retracted position on the primary spool (12) (18);	an elongate flexible blade (20) having a free end and a terminal end, the free end adapted to extend out of a measuring tape housing, said blade (20) wound upon said spool (18) and normally in a fully retracted position on said spool (18);
the secondary axis (13) (30);	a second shaft (30);
a secondary spool (14) (31) and a second gear (18) (34) turnable together about the second axis (13) (30);	a spiral spring assembly (31) and a second sheave (34) turnable together about said second shaft (30), said spiral spring assembly (31) including a spring housing (33) and a spirally wound spring (32),
the secondary spool (14) (31) having a self-restoring spring (19) (32) wound around it and contained within the spool (14) (31) so as to wind and unwind about the secondary axis (13) (30) as the second gear (18) (34) turns; and	the spirally wound spring (32) wound around the second shaft (30) and contained within the spring housing (33) so as to wind and unwind about said second shaft (30) as said spring housing (33) and second sheave (34) turn; and
an endless flexible member (28) (38) connecting the first gear (16) (28) and the second gear (18) (34), whereby extension of the tape blade (20) (20) from its retracted position causes turning of the primary spool (12) (18) which in turn causes turning of the secondary spool (14) (31) to place the spring (19) (32) of the secondary spool (14) (31) in a spring-wound condition which spring will cause retraction of the tape blade (20) (20) upon release of the tape blade (20) (20) from an extended position.	a belt (38) connecting said first sheave (28) and said second sheave (34), whereby extension of said blade (20) from its retracted position causes turning of said spool (18) which in turn causes turning of said spring assembly (31) to place the spring (32) of said spring assembly (31) in a spring-wound condition which spring (32) will cause retraction of said blade (20) upon release of said blade (20) from an extended position.

To further assist the comparison, Applicant's FIGS. 2 and 3 are reproduced below alongside the Qilian patent's FIGS. 6 and 7, respectively.

A claim chart is also provided below showing where support is found for the new Claim 20 in Applicant's application as originally filed.

Serial No. 10/529,069 (New Claim 20)	Serial No. 10/529,069 Support
A tape measure having a double-axis reel assembly comprising:	Specification at paragraphs [0009], [0012], [0018], and [0019]; FIGS. 2 and 3, reference numerals 16, 17, 18, 30, 31, and 37.
a primary axis;	Specification at paragraph [0012]; FIGS. 2 and 3, reference numerals 16, 17, and 18.
a primary spool and	Specification at paragraph [0018] and [0025]; FIGS. 2 and 3, reference numeral 18.
a first gear turnable together about the primary axis;	Specification at paragraph [0018], [0021], and [0025]; FIGS. 2 and 3, reference numeral 28.
a flexible measuring tape blade wound upon the primary spool and normally in a fully retracted position on the primary spool;	Specification at paragraph [0018] and [0025]; FIGS. 2 and 3, reference numeral 20.
the secondary axis;	Specification at paragraph [0012]; FIGS. 2 and 3, reference numerals 30, 31, and 37.
a secondary spool and	Specification at paragraphs [0020] and [0021]; FIGS. 2 and 3, reference numeral 31.
a second gear turnable together about the second axis;	Specification at paragraphs [0021] and [0025]; FIGS. 2 and 3, reference numeral 34.
the secondary spool having a self-restoring spring wound around it and contained within the spool so as to wind and unwind about the secondary axis as the second gear turns; and	Specification at paragraphs [0020], [0021], and [0025]; FIGS 2 and 3, reference numeral 32.
an endless flexible member connecting the first gear and the second gear, whereby extension of the tape blade from its retracted position causes turning of the primary spool which in turn causes turning of the secondary spool to place the spring of the secondary spool in a spring-wound condition which spring will cause retraction of the tape blade upon release of the tape blade from an extended position.	Specification at paragraphs [0025] and [0021]; FIGS. 2 and 3, reference numeral 38.

In relation to specific differences in terminology between Qilian and the instant application, the following equivalents are noted:

- Applicant's claimed sheaves or pulleys 28, 34 are the same as Qilian's gears 16, 18, as is understood by one of ordinary skill in the art and evidenced by the toothed depictions of the sheaves 28, 34 in Applicant's FIGS. 2 and 3;

- The secondary spool 14 of Qilian is the same as Applicant's claimed spiral spring assembly 32, as may be observed by comparing the respective elements in Applicant's FIG. 3 and Qilian's FIG. 7;
- Applicant's belt 38 for connecting the first and second sheaves 28, 34 is the same as Qilian's endless flexible member 28; and
- The primary axis 11 and the secondary axis 13 of Qilian is the same as Applicant's claimed first shaft 16 and second shaft 30.

Applicant's application also prevails in priority over Qilian. The instant application claims the benefit of Provisional Application No. 60/459,528, filed on April 1, 2003. The patent to Qilian was based on application filed on June 11, 2004, more than a year after Applicant's priority date. Qilian is therefore not a valid prior art reference to the instant application and would not prevail in priority.

In order for Applicant to initiate the interference proceeding with Qilian, it is necessary that at least one of Applicant's claims to be in condition for allowance. (37 C.F.R. 41.102). It is submitted that at least one of Claims 1-4, and 6-19 as amended are allowable for the reasons stated hereinabove. Additionally, since Claim 1 of Qilian was allowed over the prior art references cited by the Examiner, it is submitted that Claim 20 of the instant application is also allowable.

In light of the above remarks, a formal Notice of Allowance of the pending claims and an Interference Proceeding is respectfully solicited.

While Applicant's attorney has made a sincere effort to properly define Applicant's invention and to distinguish the same from the prior art, should the Examiner deem that other language would be more appropriate, it is requested that a telephone interview be had with Applicant's attorney in a sincere effort to expedite the prosecution of the application.